MENINGOCOCCAL DISEASE

Clinical Features: The disease manifests most commonly as meningitis and/or meningococcemia that may progress rapidly to purpura fulminant, shock, and death. The disease is characterized by sudden onset with fever, intense headache, nausea (often with vomiting), and stiff neck. Up to 15% of the population may carry *N. meningitidis* in the nasopharynx without developing invasive disease, while a few develop bacteremia, sepsis, meningitis, or pneumonia. Even with early diagnosis and appropriate treatment, the fatality rate of meningococcal meningitis is 5-15%.

Causative Agent: Meningococcal disease is an acute bacterial disease caused by *Neisseria meningitidis*, a gram-negative, diplococcus bacterium. The most common serogroups of *N. meningitidis* in the United States are B, C, W-135, and Y.

Mode of Transmission: Transmission of *N. meningitidis* is from person to person by direct contact with respiratory droplets from the nose and throat of infected individuals. Late winter to early spring is the peak season for infection, but infections can occur at any time of the year. Humans are the reservoir.

Incubation Period: The incubation period is usually three or four days, but may range from two to 10 days.

Period of Communicability: Individuals are communicable until meningococci are no longer present in the discharges from the nose and mouth. Meningococci usually disappear from the nasopharynx within 24 hours after the institution of appropriate therapy. Penicillin will temporarily suppress the organisms but will not eradicate them.

Public Health Significance: Vaccination and post-exposure prophylaxis are effective in preventing meningococcemia. Vaccines are available to prevent disease caused by types A, C, Y, and W-135. There is no vaccine for serogroup B, historically responsible for 20-30% of reported cases in Kansas. Chemoprophylaxis is used for close contacts of cases (e.g., household members, intimate contacts, health care personnel performing mouth-to-mouth resuscitation, day care center playmates). No chemoprophylaxis is recommended for less intimate contacts (e.g., school classmates, health care workers with minimal contact, and etc.) except during an outbreak or in a child care center.

Reportable Disease in Kansas Since: 1982

Laboratory Criteria for Surveillance Purposes

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, joint, pleural, or pericardial fluid). (Note: a positive antigen test is not sufficient to confirm a case for surveillance purposes. Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease.)

Surveillance Case Definitions

- *Confirmed:* a clinically compatible case that is laboratory confirmed.
- *Probable*: a case with a positive antigen test in CSF or clinical purpura fulminant in the absence of a positive blood culture.

Epidemiology and Trends

2005 Kansas Count: 11

	Rate per 100,000	*95% CI*
Kansas Rate	0.4	(0.2 - 0.6)
U.S. Rate (2004)	0.5	*NA*

The number of cases of meningococcal disease for 2005 (n=11) was less than the number of cases (n=14) reported in 2004. The three-year median for 2002-2004 was 15 cases. No outbreaks were detected in 2005. Cases ranged in age from less than 1 year to 89 years. There were 3 cases of meningitis and 8 cases of meningococcemia. Six cases (55%) were reported among children ≤14 years of age. The majority of cases (73%) were reported from non-urban areas. The median age was 14 years. All isolates, eight from blood samples and three from cerebrospinal fluid, were serogrouped at the state laboratory. Six (55%) isolates were group B, four (36%) were group Y, and one (9%) was group C.